Edgewood Area - Aberdeen Proving Ground, Maryland 21010-5424
U.S. Army Soldier and Biological Chemical Command

Special Containment Facility

FEATURES:

- 80 ft^3 Custom Designed Multi-Zone Glove Box
- Stainless Steel 12-Port Rodent Nose-Only Exposure Chamber
- Unique "Bag-Out" Transfer System
- Internal Volume (<75cc)

The Army has an ongoing need to evaluate the threat imposed by novel chemical/biological (CB) threat materials. The testing of such materials requires the use of special containment facilities to protect laboratory personnel and the environment. For this purpose, laboratory space in the McNamara Life Sciences laboratory has been retrofitted to house an 80 ft^3 custom designed multi-zone glove box line. This is one of only a few such class III containment cabinets in the world designed to meet the unique testing requirements imposed by special CB threat materials.

The core of the facility is a three-compartment glove box enclosure equipped with a unique "bag-out" transfer system for safe movement of special materials and equipment out of the system. It is also equipped with special fail-safe features designed for vapor containment, unlike a standard glove box. The main compartment houses a stainless steel 12-port rodent nose-only exposure chamber for the purpose of conducting inhalation toxicology tests with vapor and aerosol CB threat agent challenges. This chamber internal volume is small (<75cc) and designed for conducting short duration exposures with minute amounts of challenge material. The chamber can be used to expose mice, rats and guinea pigs either in separate tests or all at the same time.

The Edgewood CB Center's glove box system enhances the ability to: 1) safely generate and characterize aerosols and vapors of highly toxic materials under maximum containment; 2) assess the inhalation toxicology of high risk agents; and 3) assess the performance of developmental items (detectors, filters, etc.) with high risk agents. It is designed to fill the needs of customers in the intelligence community who may need special items tested, such as contaminated parcels in domestic preparedness efforts. The glove box can be used to perform standard tests, as well as evaluations that commercially available boxes are not equipped to handle. Insulation and pesticide companies, for instance, could utilize this testing capability to ensure the safety of new products and material. Potentially carcinogenic materials, such as fibers, can also be evaluated in the Edgewood CB Center's glove box system.

For additional information, E-mail research.technology@sbccom.apgea.army.mil.

For information on Technology Transfer applications, please contact us by E-mail (technical.outreach@sbccom.apgea.army.mil), or by fax to 410-436-6529.

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